

**BOTIA MACROLINEATA, A NEW SPECIES OF  
LOACH FROM INDIA (PISCES; COBITIDAE)**

by

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RÉSUMÉ.— *Botia macrolineata* sp.n., décrite des environs de Bombay en Inde, se distingue par une coloration unique.

SUMMARY.— *Botia macrolineata* sp.n., collected from near Bombay, India, can be characterised by its unique colour pattern.

Keywords : Cobitidae, *Botia macrolineata*, new species, India.

Day (1875-1878) in his « Fishes of India » reported six *Botia* species from what is now India, Sri Lanka, Pakistan, Bangladesh, Nepal and Burma : *B. nebulosa* Blyth, 1860 showing 6 barbels, *B. dario* (Hamilton, 1822) with 8 barbels, 12-13 dorsal fin rays and 7-8 anal rays, *B. geto* (Hamilton, 1822) with 8 barbels, 12 dorsal and 7 anal rays, *B. almorhae* Gray, 1831 with 8 barbels, 11-12 dorsal and 7-8 anal rays, *B. berdmorei* (Blyth, 1860) with 6 barbels, 13-15 dorsal and 7 anal rays and *B. histrionica* Blyth, 1860 with 8 barbels, 10 dorsal and 7 anal rays.

Hora (1922) studied the genus as a whole and produced a key to all known species. He divided the genus into two groups subsequently recognized as subgenera, although there is no clear indication that they are monophyletic (Sawada, 1982) : group I contains those species showing six barbels (*Hymenophysa*) and group II contains those species with eight barbels (*Botia* s.s.). Only the latter is of interest to us. Hora (1922) recognized ten species, eight of them occurring in India : *Botia rostrata* Günther, 1868, characterized by its snout length which is considerably longer than the remaining part of the head ; *B. striata* Rao, 1920, easy to be recognized by a number of narrow oblique vertical bars on the head and the body ; *B. birdi* Chaudhuri, 1909, showing only a few broad vertical bars on the head and body and having small eyes (4.4-5 times in snout length) ; *B. dario* (Hamilton,

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1822) also showing only a few broad vertical bars, but with rather large eyes (3 times in snout length); *B. histrionica* Blyth, 1860, with a few broad vertical bars, but with the origin of the dorsal fin not equidistantly set from the tip of the snout and the base of the caudal fin; *B. almorhae* Gray, 1831, with the eyes not completely situated in the posterior half of the head and with a reduced air bladder; *B. lohachata* Chaudhuri, 1909, with vertical Y-shaped bands on the body and with 2-3 bars on the caudal fin; *S. geto* (Hamilton, 1822) with vertical bars on head and body but with 2 black spots on the caudal fin.

In 1932, Hora added a new species to this list, *Botia dayi*, recognized by reticulated markings on the head and body, with dark bars anastomosing with one another and enclosing yellowish spots of different sizes. All the fins are marked with black bars. The specimens used by Hora (1932) were originally referred to *B. geto* by Day (1875-78), however, Hora (1932) synonymized this species with *B. dario*.

Kalawar & Kelhar (1956) described a new variety of *Botia striata* : *B. striata* var. *kolhapurensis*. The most important difference between both is the known maximum size : for *B. striata kolhapurensis* this is 57 mm, while *B. striata striata* reaches 90 mm TL. The colour pattern consists of broad dark brownish green and narrow yellow bars which, from behind the nape, form slightly oblique hoops directed backwards. The bands do not completely surround the body. The bars on the head are directed obliquely forwards. Chhapgar & Sane (1979) give further details of *B. striata kolhapurensis*.

Yazdani (1980) and Jayaram (1981) cited eight species for *Botia* s.s. in India. Jayaram, referring to Menon (1974) considered *B. dayi* as a junior synonym of *B. rostrata* and produced a key to the species after Hora (1922).

Recently, the Musée Royal de l'Afrique Centrale, Tervuren, Belgium, received a number of living *Botia* specimens, originating from near Bombay, India. Study of the different *Botia* spp. mentioned above, led to the conclusion that this material contains a new species, characterized by its colour pattern. As the Musée Royal de l'Afrique Centrale mainly houses African collections, the type specimens are donated to the Institut Royal des Sciences Naturelles de Belgique (ISNB) and to the Muséum National d'Histoire Naturelle, Paris (MNHN).

### *Botia macrolineata* sp. n.

Holotype : ISNB 701. From « ± 100 km from Bombay, India »; 55.0 mm TL (42.6 mm SL); male.

Paratypes : MNHN 1984. 344 (2 specimens). Same locality as the holotype ; 53.0-55.2 mm TL (40.1-42.9 mm SL).



Tabl. I. — Measurements and meristic characters of the holotype and the two paratypes of *Botia macroleineata* sp. n.

	holotype	paratypes
Total length (mm)	55.0	53.0 - 55.2
Standard length (mm)	42.6	40.1 - 42.9
Head length (lateral) (% SL)	28.8	29.6 - 31.2
Snout length (% HL)	47.4	47.6 - 47.8
Eye diameter (% HL)	24.9	21.8 - 22.8
Interorbital distance (% HL)	42.3	37.9 - 40.9
Postorbital distance (% HL)	28.5	29.9 - 30.3
Predorsal distance (% SL)	50.2	47.8 - 48.3
Preal distance (% SL)	77.1	77.6 - 78.6
Prepelvic distance (% SL)	53.1	52.9 - 54.4
Prepectoral distance (% SL)	28.3	28.7 - 28.9
Distance snout - anus (% SL)	71.4	70.9 - 72.3
Dorsal fin base length (% SL)	19.2	20.2 - 20.9
Anal fin base length (% SL)	9.4	9.0 - 10.6
Pelvic fin length (% SL)	16.7	15.9 - 17.7
Pectoral fin length (% SL)	19.3	19.5 - 22.2
Longest dorsal ray length (% SL)	22.9	22.3 - 22.7
Longest anal ray length (% SL)	15.9	16.9 - 17.2
Maximal body depth (% SL)	26.9	27.7 - 28.1
Caudal peduncle depth (% SL)	13.2	14.2 - 14.6
Dorsal fin rays	2/11	2/11 - 12
Anal fin rays	2/5	2/5 - 6
Pelvic fin rays	8	8
Pectoral fin rays	13	14 - 15
Caudal fin rays	26	26 - 28

### Description

Measurements and meristic characters of the holotype and the two paratypes are given in table I.

The head is broadly rounded in dorsal outline. The eyes are situated nearer to the posterior end of the head than to the snout. The suborbital erectile spine is strong and bifurcated at its base; the inner branch is about three times as long as the outer side. The outer side is rather straight while the inner side is slightly curved. Four pairs of barbels are present (Fig. 1); two rostral, one maxillary and one short mandibular pair. The curved mouth is situated ventrally and surrounded with thickened, fleshy lips. The lower lip shows 3-4 folds on each side. The mouth is about six times as long as wide, when closed. The anterior nostrils are modified into small tubes; they are oval-shaped in cross section. The posterior nostrils are circular, with a wide opening. In lateral view, the body is rather convex dorsally, while the belly is flattened (Fig. 2). Very small scales are present, except between

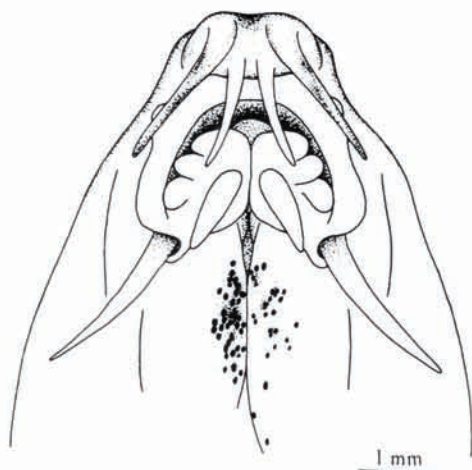


Fig. 1. — Ventral view of the head of the holotype of *Botia macrolineata* sp. n., 55.0 mm TL.

the pelvic fins. The scales are deeply embedded and partially overlapping. In the specimens examined, the origin of the dorsal fin is situated equidistantly from the snout and the caudal fin base or may be situated slightly nearer to the snout. The distal margin of the dorsal fin is rather straight. The ventral fin base is somewhat closer to the caudal fin base and its first (simple) ray lies under the first branched dorsal ray. The ventral fins extend slightly beyond the anus, which lies about 85 % eye diameter in advance of the anal fin origin. The pectoral fins do not reach the pelvics. The caudal fin is markedly forked.

#### Coloration in living specimens

Laterally, from beyond the operculum to the caudal fin base, seven large, dark-brown to blackish, transversal bars are present on a yellow-brownish, golden-like background. The anterior bars are approximately two times wider than the interspaces, while the posterior bars are only a little larger than the interspaces; in between a gradation is present. The bars are directed obliquely backwards from the dorsal to the ventral side, especially the anterior bars. The bars do not show a regular shape; they are wider on the back and on the lateral line. The first two bands may be partially in contact (not as in *Botia dayi* where the bars anastomise with each other, enclosing yellowish spots of different size; Hora, 1932). Ventrally, these bars meet in the mid-ventral line, although they are not that marked as in lateral view (Fig. 3). On the head, two large bars similar to those on the body are present; one covers the eyes, the other is situated at the posterior edge of the operculum. Blackish spots are present on the base of the pectoral and pelvic fins. A dark band is present along the anal fin base, the dorsal fin also shows such a band. On the caudal fin, two dark bars are present, the former clearly marked.





Fig. 2. — Lateral view of the holotype of *Botia macrolineata* sp. n., 55.0 mm TL.

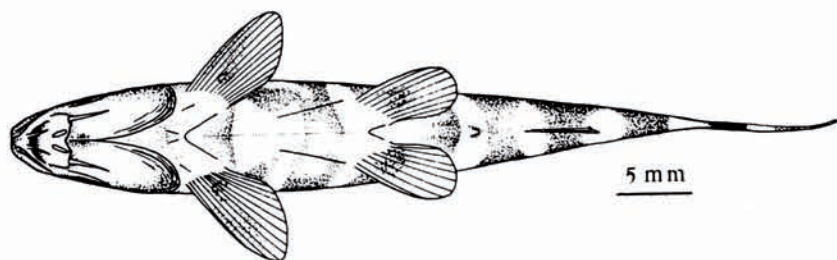


Fig. 3. — Ventral view of the holotype of *Botia macrolineata* sp. n., 55.0 mm TL.

### Discussion

A comparison between our new species and the eight species of *Botia* (s.s.) tentatively recognized from India (and neighbouring countries—Indian authors usually include Sri Lanka, Burma, Pakistan, Nepal and Bangladesh), shows that, in addition to its striking coloration, it displays the following differences: from *Botia hymenophysa* by having four pairs of barbels; from *B. rostrata* by its snout length, which is less than the length of the remaining part of the head; from *B. birdi* by a larger eye (2.1–2.3 times in snout length versus 4–4.5 times); from *B. dario* by a smaller eye (3 times in snout length); from *B. histrionica* (which is apparently restricted to Burma and Assam, Kottelat-pers.comm.) by the position of the eye (which is not completely situated in the posterior half of the head) and also by the anteriorly placed origin half of the head) and also by the anteriorly placed origin of the dorsal fin, which is almost equidistantly set from the tip of the snout and the caudal fin base; from the remaining three species (*B. striata*, *B. lohachata* and *B. almorhae*) it is distinguished by a completely different colour pattern.

Dr. K.C. Jayaram examined some colour transparencies of the new species and was of the opinion that the specimens correspond with *Botia lohachata*. However, specimens of the latter, showing the same length as our specimens of *B. macrol-*

*neata* display a completely different colour pattern and can be easily distinguished. A possible sexual dimorphism is excluded as well. Moreover, it should be noted that before preserving and describing these specimens, they were kept and observed, together with equal sized *B. lohachata* for more than two years (September 1983-November 1985) in an aquarium. During this period both species could always be separated without any doubt and no changes in their colour pattern were ever observed.

A comparison between our new species and other species classified within *Botia* (s.s.) and originating from parts of South-East Asia other than those discussed above, showed *B. macrolineata* as distinct from these as well. Therefore the possibility as if we have to deal with an introduced species might be excluded.

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